

Amendments To The Claims

The listing of claims presented below will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (previously presented) An RF front-end transceiver comprising:

a frequency synthesizer or a base band processor for providing a digital frequency control voltage (VDT) signal and an analog frequency control voltage (VAT) signal;

an oscillator for outputting a resonant frequency signal such that a frequency of the resonant frequency signal is controlled by the VDT signal and the VAT signal;

a receive amplifier for amplifying and outputting a receive RF signal;

a receive mixer for mixing the receive RF signal amplified and the resonant frequency signal to convert the receive RF signal into a receive base band signal;

a transmit mixer for mixing a transmit base band signal and the resonant frequency signal to convert the transmit base band signal into a transmit RF signal; and

a transmit amplifier for amplifying and outputting the transmit RF signal,

wherein at least one of the receive amplifier, the receive mixer, the transmit mixer and the transmit amplifier includes a resonant unit, the resonant unit being controlled by only the VDT signal or by both the VDT signal and the VAT signal.

2. (canceled).

3. (previously presented) An RF front-end receiver comprising:

a frequency synthesizer or a base band processor for providing a digital frequency control voltage (VDT) signal and an analog frequency control voltage (VAT) signal;

an oscillator for outputting a resonant frequency signal such that a frequency of the resonant frequency signal is controlled by the VDT signal and the VAT signal;

a receive amplifier for amplifying and outputting a receive RF signal; and

a receive mixer for mixing the receive RF signal amplified and the resonant frequency signal to convert the receive RF signal into a receive base band signal;

wherein at least one of the receive amplifier and the receive mixer includes a resonant unit, the resonant unit being controlled by only the VDT signal or by both the VDT signal and the VAT signal.

4-7. (canceled).

8. (previously presented) An RF front-end transmitter comprising:

a frequency synthesizer or a base band processor for providing a digital frequency control voltage (VDT) signal and an analog frequency control voltage (VAT) signal;

an oscillator for outputting a resonant frequency signal such that a frequency of the resonant frequency signal is controlled by the VDT signal and the VAT signal;

a transmit mixer for mixing a transmit base band signal and the resonant frequency signal to convert the transmit base band signal into a transmit RF signal; and

a transmit amplifier for amplifying and outputting the transmit RF signal,

wherein at least one of the transmit mixer and the transmit amplifier includes a resonant unit, the resonant unit being controlled by only the VDT signal or by both the VDT signal and the VAT signal.

9-20. (canceled)

21. (New) The RF front-end transceiver of claim 1, wherein the resonant unit is controlled by the VDT signal and the VAT signal, and

wherein the resonant unit is any one of a first LC tank including a inductor controlled by the VDT signal and a capacitor controlled by the VAT signal; a second LC tank including a capacitor controlled by the VDT signal, a capacitor controlled by the VAT signal and a fixed capacitor; a third LC tank including an inductor and a capacitor controlled by the VDT signal, and a capacitor controlled by the VAT signal and a fixed inductor; and a fourth LC tank including an inductor controlled by the VDT signal, an inductor controlled by the VAT signal and a fixed capacitor.

22. (New) The RF front-end transceiver of claim 1, wherein each of the receive amplifier, the receive mixer, the transmit mixer and the transmit amplifier includes the resonant unit.

23. (New) The RF front-end receiver of claim 3, wherein the resonant unit is controlled by the VDT signal and the VAT signal, and

wherein the resonant unit is any one of a first LC tank including a inductor controlled by the VDT signal and a capacitor controlled by the VAT signal; a second LC tank including a capacitor controlled by the VDT signal, a capacitor controlled by the VAT signal and a fixed capacitor; a third LC tank including an inductor and a capacitor controlled by the VDT signal, and a capacitor controlled by the VAT signal and a fixed inductor; and a fourth LC tank including an inductor controlled by the VDT signal, an inductor controlled by the VAT signal and a fixed capacitor.

24. (New) The RF front-end receiver of claim 3, each of the receive amplifier and the receive mixer includes the resonant unit.

25. (New) The RF front-end transmitter of claim 8, wherein the resonant unit is controlled by the VDT signal and the VAT signal, and

wherein the resonant unit is any one of a first LC tank including a inductor controlled by the VDT signal and a capacitor controlled by the VAT signal; a second LC tank including a capacitor controlled by the VDT signal, a capacitor controlled by the VAT signal and a fixed capacitor; a third LC tank including an inductor and a capacitor controlled by the VDT signal, and a capacitor controlled by the VAT signal and a fixed inductor; and a fourth LC tank including an inductor controlled by the VDT signal, an inductor controlled by the VAT signal and a fixed capacitor.

26. (New) The RF front-end transmitter of claim 8, wherein each of the transmit mixer and the transmit amplifier includes the resonant unit.